



MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATHESON TRI-GAS, INC.
959 ROUTE 46 EAST
PARSIPPANY, NEW JERSEY 07054-0624

EMERGENCY CONTACT:
CHEMTREC 1-800-424-9300
INFORMATION CONTACT:
973-257-1100

SUBSTANCE: ETHYL BENZENE

TRADE NAMES/SYNONYMS:

MTG MSDS 185; BENZENE, ETHYL-; EB; PHENYLETHANE; ETHYLBENZENE; ETHYLBENZOL;
ALPHA-METHYLTOLUENE; UN 1175; C8H10; MAT08780

CHEMICAL FAMILY: hydrocarbons, aromatic

CREATION DATE: Jan 24 1989

REVISION DATE: Jun 17 2004

2. COMPOSITION, INFORMATION ON INGREDIENTS

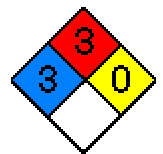
COMPONENT: ETHYL BENZENE

CAS NUMBER: 100-41-4

PERCENTAGE: 100

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=3 FIRE=3 REACTIVITY=0



EMERGENCY OVERVIEW:

COLOR: colorless

PHYSICAL FORM: liquid

ODOR: aromatic odor

MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye irritation, aspiration hazard, central nervous system depression, suspect cancer hazard (in animals)

PHYSICAL HAZARDS: Flammable liquid and vapor. Vapor may cause flash fire.

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: irritation (possibly severe), chest pain, difficulty breathing, headache,

drowsiness, dizziness, loss of coordination, coma

LONG TERM EXPOSURE: irritation, headache, drowsiness, emotional disturbances, cancer

SKIN CONTACT:

SHORT TERM EXPOSURE: irritation (possibly severe)

LONG TERM EXPOSURE: irritation

EYE CONTACT:

SHORT TERM EXPOSURE: irritation (possibly severe)

LONG TERM EXPOSURE: irritation

INGESTION:

SHORT TERM EXPOSURE: nausea, vomiting, stomach pain, aspiration hazard

LONG TERM EXPOSURE: no information on significant adverse effects

4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

SKIN CONTACT: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Thoroughly clean and dry contaminated clothing and shoes before reuse. Destroy contaminated shoes.

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately.

NOTE TO PHYSICIAN: For inhalation, consider oxygen. For ingestion, consider gastric lavage and activated charcoal slurry.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Severe fire hazard. Vapor/air mixtures are explosive above flash point. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Electrostatic discharges may be generated by flow or agitation resulting in ignition or explosion.

EXTINGUISHING MEDIA: regular dry chemical, carbon dioxide, water, regular foam

Large fires: Use regular foam or flood with fine water spray.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool



containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Evacuation radius: 800 meters (1/2 mile). Water may be ineffective.

FLASH POINT: 59 F (15 C) (CC)

LOWER FLAMMABLE LIMIT: 0.8%

UPPER FLAMMABLE LIMIT: 6.7%

AUTOIGNITION: 810 F (432 C)

FLAMMABILITY CLASS (OSHA): IB

6. ACCIDENTAL RELEASE MEASURES

AIR RELEASE:

Reduce vapors with water spray. Stay upwind and keep out of low areas.

SOIL RELEASE:

Dig holding area such as lagoon, pond or pit for containment. Dike for later disposal. Absorb with sand or other non-combustible material.

WATER RELEASE:

Cover with absorbent sheets, spill-control pads or pillows. Neutralize. Collect with absorbent into suitable container. Absorb with activated carbon. Remove trapped material with suction hoses. Collect spilled material using mechanical equipment. Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers.

OCCUPATIONAL RELEASE:

Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal. Remove sources of ignition. Keep unnecessary people away, isolate hazard area and deny entry. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Protect from physical damage. Store outside or in a detached building. Store with flammable liquids. Subject to storage regulations: U.S. OSHA 29 CFR 1910.106. Grounding and bonding required. Keep separated from incompatible substances.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

ETHYL BENZENE:

100 ppm (435 mg/m³) OSHA TWA
125 ppm (543 mg/m³) OSHA STEL (vacated by 58 FR 35338, June 30, 1993)
100 ppm ACGIH TWA
125 ppm ACGIH STEL
100 ppm (435 mg/m³) NIOSH recommended TWA 10 hour(s)
125 ppm (545 mg/m³) NIOSH recommended STEL

VENTILATION: Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

800 ppm

Any chemical cartridge respirator with organic vapor cartridge(s).
Any air-purifying respirator with a full facepiece and an organic vapor canister.
Any powered, air-purifying respirator with organic vapor cartridge(s).
Any supplied-air respirator.
Any self-contained breathing apparatus with a full facepiece.

Escape -

Any air-purifying respirator with a full facepiece and an organic vapor canister.
Any appropriate escape-type, self-contained breathing apparatus.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.
Any self-contained breathing apparatus with a full facepiece.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: liquid

COLOR: colorless

ODOR: aromatic odor

MOLECULAR WEIGHT: 106.17

MOLECULAR FORMULA: C-H₃-C-H₂-C₆-H₅



BOILING POINT: 277 F (136 C)

FREEZING POINT: -139 F (-95 C)

VAPOR PRESSURE: 7.1 mmHg @ 20 C

VAPOR DENSITY (air=1): 3.66

SPECIFIC GRAVITY (water=1): 0.8670

WATER SOLUBILITY: 0.015%

PH: Not available

VOLATILITY: 100%

ODOR THRESHOLD: 140 ppm

EVAPORATION RATE: <1 (butyl acetate=1)

VISCOSITY: 0.64 cP @ 25 C

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

SOLVENT SOLUBILITY:

Soluble: alcohol, ether, benzene, sulfur dioxide, carbon tetrachloride

Insoluble: ammonia

10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat. Keep out of water supplies and sewers.

INCOMPATIBILITIES: acids, bases, oxidizing materials, combustible materials

HAZARDOUS DECOMPOSITION:

Thermal decomposition products: oxides of carbon

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

ETHYL BENZENE:

IRRITATION DATA:

15 mg/24 hour(s) open skin-rabbit mild; 500 mg eyes-rabbit severe

TOXICITY DATA:

55000 mg/m³/2 hour(s) inhalation-rat LC₅₀; 17800 ul/kg skin-rabbit LD₅₀; 3500 mg/kg oral-rat LD₅₀

CARCINOGEN STATUS: IARC: Human Inadequate Evidence, Animal Sufficient Evidence, Group 2B;

ACGIH: A3 -Animal Carcinogen

LOCAL EFFECTS:

Irritant: inhalation, skin, eye

ACUTE TOXICITY LEVEL:

Moderately Toxic: ingestion

Slightly Toxic: inhalation, dermal absorption



TARGET ORGANS: central nervous system

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: kidney disorders, liver disorders, respiratory disorders, skin disorders and allergies

TUMORIGENIC DATA: Available.

MUTAGENIC DATA: Available.

REPRODUCTIVE EFFECTS DATA: Available.

ADDITIONAL DATA: May cross the placenta.

12. ECOLOGICAL INFORMATION

FATE AND TRANSPORT:

KOW: 154170.05 (log = 5.196) (estimated from water solubility)

KOC: 44668.36 (log = 4.657) (estimated from water solubility)

HENRY'S LAW CONSTANT: 6.6 E -3 atm-m³/mol

BIOCONCENTRATION: 36.39 (estimated from water solubility)

AQUATIC PROCESSES: 2.6730095 hours (River Model: 1 m deep, 1 m/s flow, 3 m/s wind)

ENVIRONMENTAL SUMMARY: Relatively non-persistent in the environment. Not expected to leach through the soil or the sediment. Accumulates very little in the bodies of living organisms. Highly volatile from water.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Ethylbenzene

ID NUMBER: UN1175

HAZARD CLASS OR DIVISION: 3

PACKING GROUP: II

LABELING REQUIREMENTS: 3



CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

SHIPPING NAME: Ethylbenzene

UN NUMBER: UN1175

CLASS: 3

PACKING GROUP/RISK GROUP: II

15. REGULATORY INFORMATION

U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):

ETHYL BENZENE: 1000 LBS RQ

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30): Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40): Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):

ACUTE: Yes

CHRONIC: Yes

FIRE: Yes

REACTIVE: No

SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65):

ETHYL BENZENE

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

STATE REGULATIONS:

California Proposition 65:

Known to the state of California to cause the following:

ETHYL BENZENE

Cancer (Jun 11, 2004)

CANADIAN REGULATIONS:

WHMIS CLASSIFICATION: B2.

NATIONAL INVENTORY STATUS:

U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDL): Not determined.



16. OTHER INFORMATION

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